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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/[illegible]625	[illegible]/99	OGAWA, H	[illegible]

MM91/0713

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EXAMINER	ART UNIT	PAPER NUMBER
LEE, S	[illegible]	

DATE MAILED: 07/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary	Application No.	Applicant(s)	
	09/449,625	OGAWA, HIROSHI	
	Examiner	Art Unit	
	Shun Lee	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 1999* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 November 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The listing of references (see pgs. 1, 15-21, 29, and 30) in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The disclosure is objected to because of the following informalities: Table 1, the heading "Coating Non-Uniformity" lacks dimensions (*e.g.*, "[μm]"). Appropriate correction is required.

3. The use of the trademark PANDEX (pg. 33), EPICOAT (pg. 33), CORONATE (pg. 33), and BYRON (pg. 37) has been noted in this application. It should be capitalized (*e.g.*, Pandex should be PANDEX) wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

5. Claims 9-16 are objected to because of the following informalities: claims 9-16 end with a period in the middle of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation of a direction in which the stimulable phosphor-containing coating solution is discharged in a second plane. Thus an angle formed by the direction in which the stimulable phosphor-containing coating solution is discharged and the second plane is 0° which contradicts the limitation that the angle is from 5 to 60°. Therefore, claim 18 fails to particularly point out and distinctly claim the subject matter (see α in Fig. 1).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

> by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claims 1 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanagita *et al.* (US 5,877,504).

In regard to claim 1, Yanagita *et al.* disclose a method of manufacturing a radiation image conversion panel in which a stimulable phosphor-containing coating solution, which contains at least a stimulable phosphor and a binder (column 10, lines 51-57), is applied to a support by use of a coating means such as a doctor blade, roll coater, knife-coater, extrusion coater, and so forth (column 11, lines 40-45) such that the film thickness of a coated film of the stimulable phosphor-containing coating solution is 100 μm or more (*e.g.*, 250 μm, column 17, lines 44 and 45).

In regard to claim 19, Yanagita *et al.* disclose a radiation image conversion panel obtained by the method of manufacturing a radiation image conversion panel in which a stimulable phosphor-containing coating solution, which contains at least a stimulable phosphor and a binder (column 10, lines 51-57), is applied to a support by use of a coating means such as a doctor blade, roll coater, knife-coater, extrusion coater, and so forth (column 11, lines 40-45) such that the film thickness of a coated film of the stimulable phosphor-containing coating solution is 100 μm or more (*e.g.*, 250 μm, column 17, lines 44 and 45).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

> the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of Van Havenbergh *et al.* (US 5,340,661).

In regard to claim 2 which is dependent on claim 1, the method of Yanagita *et al.* lacks an explicit description that the film thickness of the coated film of the stimulable phosphor-containing coating solution is from 200 to 1,000 μm. However, Yanagita *et al.* provide the example of 250 μm which is in this range. Van Havenbergh *et al.* teach that the film thickness of the coated film of the stimulable phosphor-containing coating solution is from 10 to 1,000 μm (preferably 150 to 250 μm) in order to obtain a radiographic screen of desired sensitivity (column 8, lines 54-59). Therefore it would be obvious to one of ordinary skill to provide a 200 to 1,000 μm thick stimulable phosphor film in the method of Yanagita *et al.*, in order to obtain a radiographic screen of desired sensitivity as taught by Van Havenbergh *et al.*

In regard to claim 6 which is dependent on claim 2, the method of Yanagita *et al.* lacks an explicit description that the viscosity of the stimulable phosphor-containing coating solution is from 1 to 10 Pa·s. Yanagita *et al.* teach that by optimizing the viscosity (*e.g.*, 23 Ps ≡ 2.3 Pa·s; see column 17, lines 39 and 40) of the coating solution, a high filling ratio of the phosphor can be obtained (column 5, lines 41-53). Therefore it would be obvious to one of ordinary skill to provide a stimulable phosphor-containing coating solution with a viscosity of 1 to 10 Pa·s in the method of Yanagita *et al.*, in order to obtain a high filling ratio of the phosphor.

12. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of Tsunoda *et al.* (US 5,458,913) and Beguin (US 2,681,294).

In regard to claim 3 which is dependent on claim 1, the method of Yanagita *et al.* lacks an explicit description that at least one of the support and the extrusion coater is moved, or that the speed of the movement is from 0.5 to 50 m/min. Extrusion coaters are well known in the art. For example, Beguin teaches that the thickness of the coating depends on the speed of movement of the support relative to the extrusion coater (*i.e.*, the faster the speed, the thinner the coating, see column 7, lines 14-21). Tsunoda *et al.* teach to move the support relative to the extrusion coater (*e.g.*, a speed of up to 1000 m/min) in order to obtain a desired thickness of the coating (column 5, lines 37-40). Therefore it would be obvious to one of ordinary skill to move the support relative to the extrusion coater at a speed of 0.5 to 50 m/min in the method of Yanagita *et al.*, in order to obtain a desired thickness of the coating as taught by Tsunoda *et al.* and Beguin.

In regard to claim 7 which is dependent on claim 3, the method of Yanagita *et al.* lacks an explicit description that the viscosity of the stimulable phosphor-containing coating solution is from 1 to 10 Pa·s. Yanagita *et al.* teach that by optimizing the viscosity (*e.g.*, 23 Ps ≡ 2.3 Pa·s; see column 17, lines 39 and 40) of the coating solution, a high filling ratio of the phosphor can be obtained (column 5, lines 41-53). Therefore it would be obvious to one of ordinary skill to provide a stimulable phosphor-containing

coating solution with a viscosity of 1 to 10 Pa·s in the method of Yanagita *et al.*, in order to obtain a high filling ratio of the phosphor.

13. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of Van Havenbergh *et al.* (US 5,340,661) as applied to claim 2 above, and further in view of Tsunoda *et al.* (US 5,458,913) and Beguin (US 2,681,294).

In regard to claim 4 which is dependent on claim 2, the method of Yanagita *et al.* lacks an explicit description that at least one of the support and the extrusion coater is moved, or that the speed of the movement is from 0.5 to 50 m/min. Extrusion coaters are well known in the art. For example, Beguin teaches that the thickness of the coating depends on the speed of movement of the support relative to the extrusion coater (*i.e.*, the faster the speed, the thinner the coating, see column 7, lines 14-21). Tsunoda *et al.* teach to move the support relative to the extrusion coater (*e.g.*, a speed of up to 1000 m/min) in order to obtain a desired thickness of the coating (column 5, lines 37-40). Therefore it would be obvious to one of ordinary skill to move the support relative to the extrusion coater at a speed of 0.5 to 50 m/min in the method of Yanagita *et al.*, in order to obtain a desired thickness of the coating as taught by Tsunoda *et al.* and Beguin.

In regard to claim 8 which is dependent on claim 4, the method of Yanagita *et al.* lacks an explicit description that the viscosity of the stimulable phosphor-containing coating solution is from 1 to 10 Pa·s. Yanagita *et al.* teach that by optimizing the viscosity (*e.g.*, 23 Ps ≡ 2.3 Pa·s; see column 17, lines 39 and 40) of the coating solution,

a high filling ratio of the phosphor can be obtained (column 5, lines 41-53). Therefore it would be obvious to one of ordinary skill to provide a stimulable phosphor-containing coating solution with a viscosity of 1 to 10 Pa·s in the method of Yanagita *et al.*, in order to obtain a high filling ratio of the phosphor.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504).

In regard to claim 5 which is dependent on claim 1, the method of Yanagita *et al.* lacks an explicit description that the viscosity of the stimulable phosphor-containing coating solution is from 1 to 10 Pa·s. Yanagita *et al.* teach that by optimizing the viscosity (*e.g.*, 23 Ps ≡ 2.3 Pa·s; see column 17, lines 39 and 40) of the coating solution, a high filling ratio of the phosphor can be obtained (column 5, lines 41-53). Therefore it would be obvious to one of ordinary skill to provide a stimulable phosphor-containing coating solution with a viscosity of 1 to 10 Pa·s in the method of Yanagita *et al.*, in order to obtain a high filling ratio of the phosphor.

15. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of O'Brien (US 4,445,458).

In regard to claim 9 which is dependent on claim 1, the method of Yanagita *et al.* lacks that the stimulable phosphor-containing coating solution is applied such that a gap A (μm) between a discharge opening at the tip of the extrusion coater and the support, and a film thickness B (μm) of the coated film of the stimulable phosphor-containing coating solution satisfy the following relational expression:

$0.75 \times B + 100\ \mu m \leq A \leq 1.10 \times B + 130\ \mu m$. O'Brien teaches (column 4, line 42 to

column 5, line 3) that in order to obtain a high quality coating, a gap between a discharge opening at the tip of the extrusion coater and the support is to be adjusted ±d (where d is in the range 0 to about 0.060 in ≡ 1524 μm; see Fig. 3) depending on the coating solution flow properties, coating thickness, coating speed, and obtuse angle 64 (see Fig. 3). Therefore it would be obvious to one of ordinary skill to adjust the gap A (*e.g.*, 0.75 X B + 100 μm ≤ A ≤ 1.10 X B + 130 μm) in the method of Yanagita *et al.*, in order to obtain a high quality coating as taught by O'Brien.

16. Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of Van Havenbergh *et al.* (US 5,340,661) as applied to claims 2 and 6 above, and further in view of O'Brien (US 4,445,458).

In regard to claim 10 (which is dependent on claim 2) and claim 14 (which is dependent on claim 6), the method of Yanagita *et al.* lacks that the stimulable phosphor-containing coating solution is applied such that a gap A (μm) between a discharge opening at the tip of the extrusion coater and the support, and a film thickness B (μm) of the coated film of the stimulable phosphor-containing coating solution satisfy the following relational expression: 0.75 X B + 100 μm ≤ A ≤ 1.10 X B + 130 μm. O'Brien teaches (column 4, line 42 to column 5, line 3) that in order to obtain a high quality coating, a gap between a discharge opening at the tip of the extrusion coater and the support is to be adjusted ±d (where d is in the range 0 to about 0.060 in ≡ 1524 μm; see Fig. 3) depending on the coating solution flow properties, coating thickness, coating speed, and obtuse angle 64 (see Fig. 3). Therefore it would be obvious to one of ordinary skill to adjust the gap A (*e.g.*, 0.75 X B + 100 μm ≤ A ≤ 1.10 X B + 130 μm) in

the method of Yanagita *et al.*, in order to obtain a high quality coating as taught by O'Brien.

17. Claims 11 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of Tsunoda *et al.* (US 5,458,913) and Beguin (US 2,681,294) as applied to claims 3 and 7 above, and further in view of O'Brien (US 4,445,458).

In regard to claim 11 (which is dependent on claim 3) and claim 15 (which is dependent on claim 7), the method of Yanagita *et al.* lacks that the stimulable phosphor-containing coating solution is applied such that a gap A (μm) between a discharge opening at the tip of the extrusion coater and the support, and a film thickness B (μm) of the coated film of the stimulable phosphor-containing coating solution satisfy the following relational expression: $0.75 \times B + 100\ \mu m \leq A \leq 1.10 \times B + 130\ \mu m$. O'Brien teaches (column 4, line 42 to column 5, line 3) that in order to obtain a high quality coating, a gap between a discharge opening at the tip of the extrusion coater and the support is to be adjusted ±d (where d is in the range 0 to about 0.060 in ≡ 1524 μm; see Fig. 3) depending on the coating solution flow properties, coating thickness, coating speed, and obtuse angle 64 (see Fig. 3). Therefore it would be obvious to one of ordinary skill to adjust the gap A (*e.g.*, $0.75 \times B + 100\ \mu m \leq A \leq 1.10 \times B + 130\ \mu m$) in the method of Yanagita *et al.*, in order to obtain a high quality coating as taught by O'Brien.

18. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of Van Havenbergh *et al.* (US 5,340,661),

Tsunoda *et al.* (US 5,458,913), and Beguin (US 2,681,294) as applied to claims 4 and 8 above, and further in view of O'Brien (US 4,445,458).

In regard to claim 12 (which is dependent on claim 4) and claim 16 (which is dependent on claim 8), the method of Yanagita *et al.* lacks that the stimulable phosphor-containing coating solution is applied such that a gap A (μm) between a discharge opening at the tip of the extrusion coater and the support, and a film thickness B (μm) of the coated film of the stimulable phosphor-containing coating solution satisfy the following relational expression: $0.75 \times B + 100\ \mu m \leq A \leq 1.10 \times B + 130\ \mu m$. O'Brien teaches (column 4, line 42 to column 5, line 3) that in order to obtain a high quality coating, a gap between a discharge opening at the tip of the extrusion coater and the support is to be adjusted ±d (where d is in the range 0 to about 0.060 in ≡ 1524 μm; see Fig. 3) depending on the coating solution flow properties, coating thickness, coating speed, and obtuse angle 64 (see Fig. 3). Therefore it would be obvious to one of ordinary skill to adjust the gap A (*e.g.*, $0.75 \times B + 100\ \mu m \leq A \leq 1.10 \times B + 130\ \mu m$) in the method of Yanagita *et al.*, in order to obtain a high quality coating as taught by O'Brien.

19. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) as applied to claim 5 above, and further in view of O'Brien (US 4,445,458).

In regard to claim 13 which is dependent on claim 5, the method of Yanagita *et al.* lacks that the stimulable phosphor-containing coating solution is applied such that a gap A (μm) between a discharge opening at the tip of the extrusion coater

and the support, and a film thickness B (μm) of the coated film of the stimulable phosphor-containing coating solution satisfy the following relational expression: 0.75 X B + 100 μm ≤ A ≤ 1.10 X B + 130 μm. O'Brien teaches (column 4, line 42 to column 5, line 3) that in order to obtain a high quality coating, a gap between a discharge opening at the tip of the extrusion coater and the support is to be adjusted ±d (where d is in the range 0 to about 0.060 in ≡ 1524 μm; see Fig. 3) depending on the coating solution flow properties, coating thickness, coating speed, and obtuse angle 64 (see Fig. 3). Therefore it would be obvious to one of ordinary skill to adjust the gap A (*e.g.*, 0.75 X B + 100 μm ≤ A ≤ 1.10 X B + 130 μm) in the method of Yanagita *et al.*, in order to obtain a high quality coating as taught by O'Brien.

20. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagita *et al.* (US 5,877,504) in view of O'Brien (US 4,445,458).

In regard to claim 17 which is dependent on claim 1, the method of Yanagita *et al.* lacks that the extrusion coater is disposed on a surface of a first plane, and the support is disposed on a roller whose axis is located parallel to a direction orthogonal to the direction in which the stimulable phosphor-containing coating solution is discharged in a second plane that is located above the discharge opening at the tip of the extrusion coater and parallel to the first plane, such that an angle formed by, on the one hand, the direction of the shortest distance between the tip discharge opening and, on the other hand, the roller and the second plane is from 0 to 30°. O'Brien teaches (column 3, lines 38-48) it is known in the art that an angle (A in Fig. 2) formed by the direction in which the coating solution is discharged (32 in Fig. 2) and a direction of the

shortest distance between the tip discharge opening and the roller (which is parallel to R in Fig. 2) is need in order to properly apply a coating. Therefore it would be obvious to one of ordinary skill to provide an angle A (*e.g.*, 5 to 60°) in the method of Yanagita *et al.*, in order to properly apply a coating as taught by O'Brien.

In regard to claim 18 which is dependent on claim 1 in so far as understood, the method of Yanagita *et al.* lacks that the support is disposed on a roller with an axis and an angle formed by the direction in which the stimulable phosphor-containing coating solution is discharged and a plane formed by the axis and the discharge opening tip furthest away from the roller is from 5 to 60°. O'Brien teaches (column 3, lines 38-48) it is known in the art that an angle (A in Fig. 2) formed by the direction in which the coating solution is discharged (32 in Fig. 2) and a direction orthogonal to the web (*i.e.*, support; see R in Fig. 2) is need in order to properly apply a coating. Therefore it would be obvious to one of ordinary skill to provide an angle A (*e.g.*, 5 to 60°) in the method of Yanagita *et al.*, in order to properly apply a coating as taught by O'Brien.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860. The examiner can normally be reached on Tuesday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seungsook Ham can be reached on (703) 308-4090. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878

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July 10, 2001